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(56)参考文献 特開 平4-256497 (J P, A)

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(54)【発明の名称】 グリストラップの油類・有機物分解処理装置

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(57)【特許請求の範囲】

【請求項1】 グリストラップの槽内の水中に配置されたポンプの吸入管を上方に水面付近まで延ばし、その先端には、水面下に朝顔状に開いた受皿を装着し、前記吸入管の間には、水温を一定に保つように制御されたヒーターを設け、前記水中ポンプの吐出管は、上方に立ち上げ、水面付近で180°屈折させて下向きとし、ここに吸気口を水面上に開口させたエゼクターを接続し、エゼクターから下方へ噴流管を垂下させ、噴流管は、中間部で側方へ分岐させて中間噴出口を開口させると共に、下部は前記槽の底面付近で底面に沿うように複数に分岐させ、それぞれ前記槽内に周回する混気水流を生じさせる方向に底部噴出口を開口させ、前記槽内の水中には、前記噴流管の中間噴出口に対向させて反応籠を設け、この反応籠内には、有機物分解用の微生物と、これを担持

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する微生物担体を充填し、前記中間噴出口から前記反応籠に向けて混気水を噴射するようにしたことを特徴とするグリストラップの油類・有機物分解処理装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、大規模な厨房等からの排水を下水に流す前に分解処理するためのグリストラップにおける油類・有機物の分解処理装置に関するものである。

10 【0002】

【従来の技術】従来のグリストラップにおける排水処理方法としては、定期的にバキュームカーで吸収して掃除する方法、定期的に分解用微生物を投入する方法、又はポンプによって水面上の油脂・スカムを吸引し、油水分離機で分離して処理する方法等さまざま行われている。

何れも、コストが高つくいたり、2次的に始末しなければならなかったり、定期的に処理する中間で悪臭が発生する等の問題点があった。

【0003】

【発明が解決しようとする課題】この発明は、上記のような従来のグリストラップにおける問題点を解決し、更には油質以外の有機物をも分解消滅でき、省スペース化、省力化、低コスト化を実現できる分解処理装置を提供することを課題としている。

【0004】

【課題を解決するための手段】グリストラップの槽15内の水中に、ポンプ1を配置し、ポンプ1の吸入管2を上方に向けて延ばし、水面附近の水中に朝顔状に開いた受皿7をセットする。この垂直に立ち上った吸入管2内に、水温を一定に保つように制御されたヒーター10を貫通的に接続する。ポンプ1の吐出管3も上方向に垂直に延ばし、槽15の水面附近にエゼクター4を接続すると共に、180°屈折させ、噴流管5として槽15の底部まで落とし込む。噴流管5は、底面附近に於てT字形に水平に分岐させ、その先端には底部噴出口6を開口させ、それぞれが槽15内に広がる混気水流を生じさせるようにする。噴流管5の中間部は、側方へ分岐させて中間噴出口6を開口させる。エゼクター4の吸気口は、槽15の水面上で、槽15の上蓋との空間に開口させて、悪臭を含んだ空気を噴流管5内へ吸入し、混気水を噴出口6から噴射する。パンチング板又は不銹金網を主材とした通水・通気性の反応籠11の中に、有機物を分解消滅させる微生物と、これを担持するのに適した多孔質天然石のような物質の微生物担体を充填し、槽15の水中の一角に配置する。そして、噴流管5の中間噴出口6を

【0005】

【発明の実施の形態】図面を参照して本発明の実施の形態を説明する。図において実線矢印は水流を、破線矢印は空気の流れをそれぞれ示す。グリストラップの槽15内の水中の一角に反応籠11を定着させる。ポンプ1が回転し、吸入管2の上端の受皿7が油・浮上スカムを集収しポンプ1を介して吐出管3に送られる。吐出管3内

15内への流入口に設けられている生ゴミ集収用バスケット(図示せず)の網目を通過した小径生ゴミの分解、消滅も可能となり、また吸気口8から吸引された悪臭は、水中に噴射されて分解し、水面上で破裂した気泡は再び吸収されて水中に戻されて分解される機構により、悪臭問題も解決される。

【0006】

【実施例】耐蝕性の水中ポンプ1の吸入管2及び吐出管3をそれぞれ垂直に配管し、吸入管2の上端に受皿7を接合させ、またその中間にはヒーター10をセットする。この吸入管2は、槽15内の水の深さによって上下させ、受皿7が水面下の適切な位置となるよう考慮する。吐出管3の屈折部には横向きにサーミスター9、下向きにエゼクター4をそれぞれセットする。エゼクター4から先(下方)は噴流管5となり、槽15の底面付近でT字形に左右方向に分れて2本となる。2本の分岐パイプは所定の位置で90°屈折させその先端にはそれぞれ噴出口6を開口させる。底部噴出口6から噴射される混気水は、槽15内全体に周回する水流を起こす。更に噴流管5の垂直部分の中間から、もう1本の噴流管を分岐させ、その先端の噴出口6を、槽15内に定着させた反応籠11に対向させる。反応籠11はパンチング板又は金網を用いて通水・通気性を持たせる。反応籠11内には、多孔質天然石等の微生物担体を収容する。その容量は、槽15内の水の量によって調整する。反応籠11の設置方法は、上ブタの下面の適正な位置を支点として吊すか、又は脚によって槽15の底面に定着させる。なお、図中、符号12はドレンプラグ、13はキャプタイ

【0007】

【発明の効果】従来の技術と異なり、グリストラップそのものを反応槽とし、微生物の活動を促進させるための環境・条件を備えたことにより、油・有機物の分解処理及び臭気の問題をも解決することができるという効果を有する。

【0008】

【図面の簡単な説明】

【図1】本発明の実施例を示す組立正面図

【図2】本発明の実施例を示すA-A矢視図

【符号の説明】

1. ポンプ
2. 吸入管
3. 吐出管
4. エゼクター
5. 噴流管
6. 噴出口
7. 受皿
8. 吸気口
9. サーミスター
10. ヒーター

- 11. 反応籠
- 12. ドレンブラグ
- 13. キャブタイヤ
- 14. 吸入口
- 15. グリストラップ

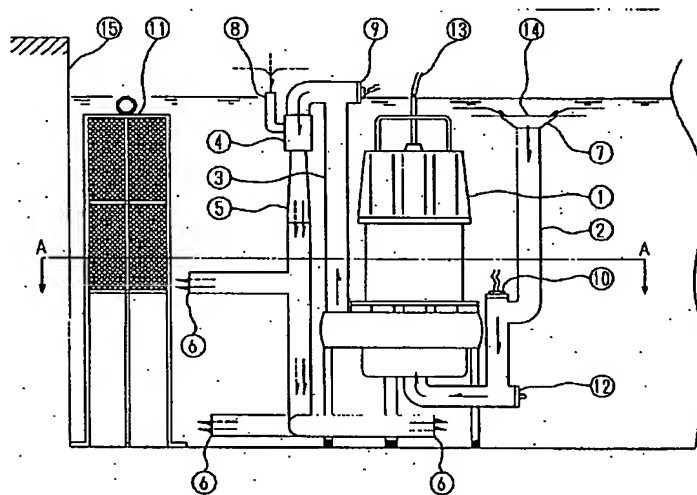
【要約】

【課題】現在行われているさまざまな処理方法は、スペース不足・コスト高・二次的な後始末、悪臭等の問題を抱えている。本発明はこの諸問題を解決し、更に有機物の分解処理をも可能とした装置の開発を課題とする。

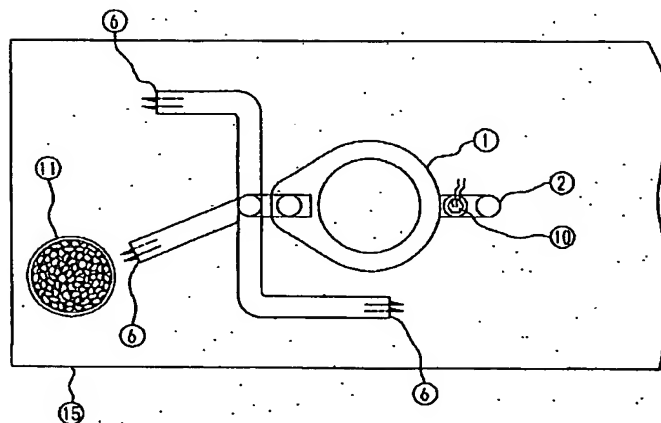
【解決の手段】グリストラップ内に設置した反応籠内の*

* 酵素・媒体の反応活動によってグリストラップそのものを反応槽とし、無閉塞型水中ポンプによって攪拌する。ポンプの吸入側にはヒーターをセットして槽内の反応液の温度を反応の適温とし、吐出側に接続されているエゼクターによって作られた混気液を反応液にジェットして酸素補給を行い、又、反応籠内の媒体の物質の選定によって水素イオン濃度（PH）を調整し反応液の水溫・酸素・PHの3条件を整えて反応速度（活力）を高めて油・有機物の分解を行い、エゼクターの吸気作用を活かして悪臭問題をも解決した。

【図1】



【図2】



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CLAIMS

(57) [Claim(s)]

[Claim 1] The suction pipe of the pump arranged underwater [in the tub of a grist lap] is extended to near the water surface up. At the tip The bottom of the water surface is equipped with the saucer opened in the shape of a bosh. In the middle of said suction pipe The heater controlled to keep water temperature constant is formed. The discharge tube of said submersible pump Connect the ejector which it rose up, and made 180 degrees refracted in the water surface neighborhood, and it considered [ejector] as facing down, and made opening of the inlet carry out here on the water surface, and jet tubing is made to hang from an ejector to a lower part. Jet tubing While making it branch to the side in pars intermedia and carrying out opening of the middle exhaust nozzle, the lower part is branched to plurality so that a base may be met near the base of said tub. Opening of the pars-basilaris-ossis-occipitalis exhaust nozzle is made to carry out in the direction which produces the mixed air stream which goes around in said tub, respectively. To underwater [in said tub] The middle exhaust nozzle of said jet tubing is made to counter, and a reaction basket is prepared. In this reaction basket The oil and the organic substance decomposition processor of the grist lap characterized by being filled up with the microorganism support which supports this with the microorganism for organic substance decomposition, and injecting mixed air water towards said reaction basket from said middle exhaust nozzle.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] This invention relates to the decomposition processor of the oil and the organic substance in the grist lap for carrying out decomposition processing, before pouring the wastewater from a large-scale kitchen etc. with sewage.

[0002]

[Description of the Prior Art] They are various line crack *****, such as the approach of attracting the fats and oils and Society for Cutting Up Men on the water surface, and separating and processing with an oily water separator with the approach of absorbing and cleaning with a vacuum car periodically as the waste-water-treatment approach in the conventional grist lap, the approach of supplying the microorganism for decomposition periodically, or a pump. It was highly sufficient for cost just, and it had to tidy up in 2nd order and all had the trouble of an offensive odor occurring in the middle processed periodically.

[0003]

[Problem(s) to be Solved by the Invention] This invention solves the trouble in the above conventional grist laps, can carry out decomposition disappearance also of the organic substance other than oil quality further, and makes it the technical problem to offer the decomposition processor which can realize space-saving-izing, laborsaving, and low cost-ization.

[0004]

[Means for Solving the Problem] To underwater [in the tub 15 of a grist lap], a pump 1 is arranged, the suction pipe 2 of a pump 1 is turned up, and is extended, and the saucer 7 opened in the shape of a bosh to underwater [near the water surface] is set. The heater 10 controlled to keep water temperature constant in this suction pipe 2 that started perpendicularly is connected in penetration. While the discharge tube 3 of a pump 1 is also extended perpendicularly upward and connects an ejector 4 to the water surface neighborhood of a tub 15, 180 degrees is made refracted and it drops to the pars basilaris ossis occipitalis of a tub 15 as jet tubing 5. Branch the jet tubing 5 at a level with T typeface in the base neighborhood, opening of the pars-basilaris-ossis-occipitalis exhaust nozzle 6 is made to carry out at the tip, and it is made to produce the mixed air stream to which each spreads in a tub 15. The pars intermedia of the jet tubing 5 is branched to the side, and carries out opening of the middle exhaust nozzle 6. On the water surface of a tub 15, space with the top cover of a tub 15 is made to carry out opening of the inlet of an ejector 4, it inhales the air containing an offensive odor into the jet tubing 5, and injects mixed air water from an exhaust nozzle 6. It is filled up with the microorganism support of matter like the porosity living rock which was suitable supporting this with the microorganism which carries out decomposition disappearance of the organic substance in the reaction basket 11 of the water flow and permeability which used the punching plate or the non-casting network as the principal member, and arranges in underwater one corner of a tub 15. And decomposition according an organic substance suspension object to delivery and a microorganism is urged in the reaction basket 11, making the middle exhaust nozzle 6 of the jet tubing 5 counter the reaction basket 11, injecting mixed air water in the reaction basket 11, and aiming at oxygen supply.

[0005]

[Embodiment of the Invention] The gestalt of operation of this invention is explained with reference to a drawing. In drawing, a continuous-line arrow head shows a stream and a broken-line arrow head shows the flow of air, respectively. A reaction vessel 11 is fixed to underwater one corner in the tub 15 of a grist lap. A pump 1 rotates, and the saucer 7 of the upper limit of a suction pipe 2 collects an oil and surfacing Society for Cutting

Up Men, and is sent to a discharge tube 3 through a pump 1. In a discharge tube 3, with an ejector 4, the air which wore the offensive odor on the water surface is attracted from an inlet 8, serves as mixed air water, and it is sent to the jet tubing 5, it is injected from the exhaust nozzle 6 of each middle and a pars basilaris ossis occipitalis, and stirring and oxygen supply are performed. At this time, the activity of the microorganism in the reaction basket 11 spreads in [whole] a tub 15, and tub 15 the very thing serves as a reaction vessel. A heater 10 is controlled by the thermistor 9 and maintains the optimal temperature for the activity of a microorganism universally. The hydrogen ion concentration of water is adjusted and temperature, oxygen, and the decomposition activities of the organic substance according to a microorganism conjointly are promoted by selection of the microorganism support in the reaction basket 11. The offensive odor which disassembly of the minor diameter kitchen garbage which passed the mesh of the basket for a kitchen garbage collection (not shown) prepared in the input into a tub 15, and disappearance of were also attained, and was attracted from the inlet 8 by this is injected underwater, and is decomposed, the air bubbles which exploded on the water surface are absorbed again, and an offensive odor problem is also solved by the device returned and decomposed underwater.

[0006]

[Example] A perpendicular is piped, respectively in corrosion-resistant suction pipe 2 and discharge tube 3 of a submersible pump 1, and a saucer 7 is joined to the upper limit of a suction pipe 2, and a heater 10 is set in the middle. This suction pipe 2 is made to go up and down with the depth of the water in a tub 15, and is considered as a saucer 7 serving as a suitable location under the water surface. A thermistor 9 is set sideways and an ejector 4 is set downward at the refraction section of a discharge tube 3, respectively. The point (lower part) serves as the jet tubing 5 from an ejector 4, and it is divided into a longitudinal direction near the base of a tub 15 at T typeface, and becomes two. 90 degrees of two branching pipes are made refracted by the position, and they make opening of the exhaust nozzle 6 carry out at the tip, respectively. The mixed air water injected from the pars-basilaris-ossis-occipitalis exhaust nozzle 6 causes the stream which goes around in [whole] a tub 15. Furthermore, one more jet tubing is branched and the reaction basket 11 which fixed the exhaust nozzle 6 at the tip in the tub 15 is made to counter from the middle of the perpendicular part of the jet tubing 5. The reaction basket 11 gives water flow and permeability using a punching plate or a wire gauze. Microorganism support, such as a porosity living rock, is held in the reaction basket 11. The amount of the water in a tub 15 adjusts the capacity. The installation approach of the reaction basket 11 hangs the location where the inferior surface of tongue of upper Buta is proper as the supporting point, or is fixed to the base of a tub 15 with foot. In addition, as for a sign 12, a drain plug and 13 are KYAPU tires among drawing.

[0007]

[Effect of the Invention] It has the effectiveness that the problem of the decomposition processing **** odor of an oil and the organic substance is also solvable, by unlike the Prior art, having made the grist lap itself into the reaction vessel, and having had the environment and conditions for promoting the activity of a microorganism.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The assembly front view showing the example of this invention

[Drawing 2] The A-A view Fig. showing the example of this invention

[Description of Notations]

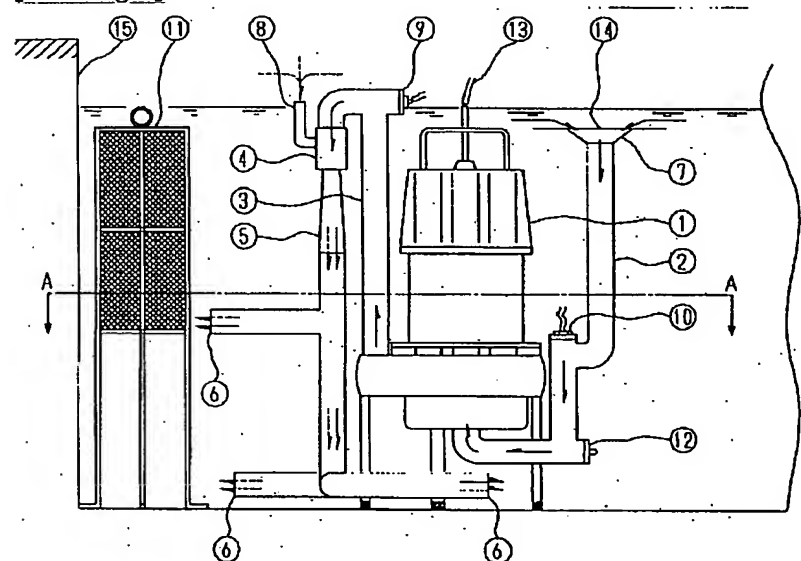
1. Pump
2. Suction Pipe
3. Discharge Tube
4. Ejector
5. Jet Tubing
6. Exhaust Nozzle
7. Saucer
8. Inlet
9. Thermistor
10. Heater
11. Reaction Basket
12. Drain Plug
13. KYAPU Tire
14. Inhalation Opening
15. Grist Lap

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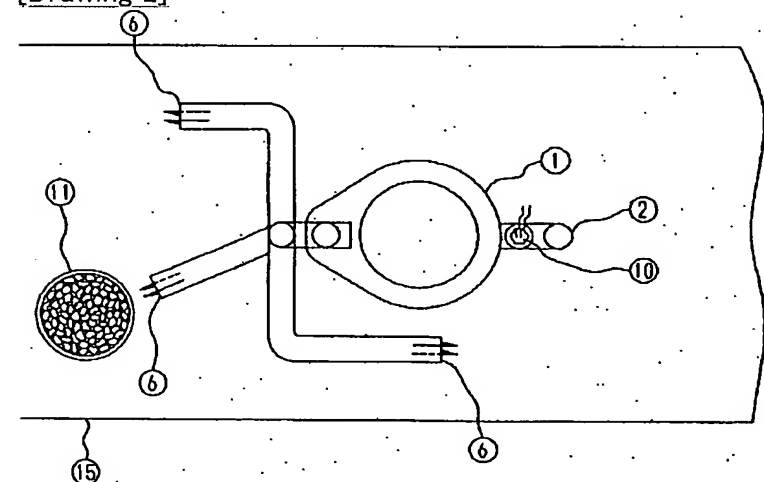
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[Drawing 1]



[Drawing 2]



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